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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/633,749	08/04/2003	Ken Yamamoto	6349-000036	5353
27572	7590	12/13/2006	EXAMINER	
HARNES, DICKEY & PIERCE, P.L.C.			JOYCE, WILLIAM C	
P.O. BOX 828			ART UNIT	
BLOOMFIELD HILLS, MI 48303			PAPER NUMBER	

3682

DATE MAILED: 12/13/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/633,749

Applicant(s)

YAMAMOTO, KEN

Examiner

William C. Joyce

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 29 September 2006.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-9 is/are pending in the application.
- 4a) Of the above claim(s) 4-8 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-3 and 9 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: _____

DETAILED ACTION

This Office Action is in response to the amendment filed September 29, 2006 for the above identified patent application.

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claims 1-3 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ogura et al. (USP 6,712,707) in view of Ouchi (WO 02/28668) and Sutton (USP 5,261,149).

Referring to Figure 5, Ogura et al. discloses a conventional hub assembly comprising: a wheel hub integrally formed with a wheel mounting flange at one end and having a cylindrical stepped portion of smaller diameter axially extending from the other end of the wheel hub; an inner ring (102) fitted on the stepped portion of the smaller diameter of the wheel hub, said inner ring being secured on the wheel hub through a caulked portion (131) formed by plastically deforming the end of the stepped portion radially outwardly; an outer joint member (106) having a shoulder adapted to be abutted to the end surface of the caulked portion and a stem portion axially extending from the shoulder, the outer joint member being inserted in the wheel hub via a serration fitted portion (125) to attain a detachable engagement with the wheel hub; a fastening means

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for combining the wheel hub and the outer joint member, said fastening means including a fastener (133) and a bore (132) in said outer joint member for receiving said fastener.

Ogura et al. does not disclose a pre-loading means formed in the serration fitted portion between the stem portion of the outer joint member and the wheel hub, but it was known in the art to provide the claimed pre-load means to securely fix the hub to the joint member. For example, Ouchi discloses a bearing apparatus for a vehicle having an outer joint member pressed into the wheel hub to form a pre-loading means (page 25, last paragraph) so as to prevent any play between the mating components. It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the hub of Ogura et al. with pre-loading means, as taught by Ouchi, motivation being to prevent any play between the mating components.

In the event the hub having the pre-load means requires disassembly, one in the art would recognize the need for pressing the hub off of the joint using a tool. The prior art to Sutton discloses a puller for separating a pair of joined components. Referring to figures 8-9, it was known to provide an end of the puller with a threaded portion or conical portion for engaging one of the joined components so as to properly align the puller to the joined components. It would have been obvious to one of ordinary skill in the art at the time the invention was made to separate the hub member from the joint member of Ogura et al. with a pulley having a conical or threaded end portion, as taught by Sutton, motivation being to facilitate the disassembly of the hub assembly with a simple puller that is easily aligned with the hub assembly.

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3. Claim 9 is rejected under 35 U.S.C. 103(a) as being unpatentable over Ogura et al. (USP 6,712,707), Ouchi (WO 02/28668), and Sutton (USP 5,261,149), as applied to claim 1 above, and further in view of Rutter et al. (US Patent 6,682,221).

Ogura et al. does not disclose an elastic ring and a pulsar ring, but the prior art to Rutter et al. teaches an elastic ring (23) and a pulsar (8). It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the prior art to Ogura et al. with an elastic ring and pulsar ring, as taught by Rutter et al., motivation being to provide the hub assembly with a sealing means for preventing the hub from contaminates and a sensing means for determining a speed of the hub assembly.

Response to Arguments

4. Applicant's arguments with respect to the claims have been considered but are moot in view of the new ground(s) of rejection.

Conclusion

5. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Note the bolt (9) used to join the hub and the joint member of Inoue et al. (US Pub 2002/0048419). Note the coupling arrangement of Orain (USP 4,576,503) and Stegeman et al. (USP 5,308,183).

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Any inquiry concerning this communication or earlier communications from the examiner should be directed to William C. Joyce whose telephone number is (571) 272-7107. The examiner can normally be reached on Monday - Thursday 7:30-5:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Richard Ridley can be reached on (571) 272-6917. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

 12/10/06
William C. Joyce